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DISCUSSION

ON PAPERS OF LAUGHLIN, KINLEY AND ANDREW ON THE THEORY OF MONEY.

WILLIAM A. SCOTT: I agree with the essential features of the theory of prices expounded by Professor Laughlin, and explain the phenomena of prices in a manner satisfactory to myself only by drawing sharply the distinction between the standard of value and the medium of exchange, as well as by viewing prices as dependent directly on the former and only indirectly and remotely on the latter. In the explanation of the value of the standard, the *starting-point* and *central fact*, in my opinion, are its valuation as a consumers' good in non-monetary uses. According to my understanding of the matter, the medium of exchange affects general prices only because the standard of value happens to constitute one of its elements. But this is not a necessary condition of things, and any theory which proceeds upon the assumption that it is necessary will fail to give a true explanation of prices.

The real question brought before us is precisely how prices are affected by the service of the standard as an element of the medium of exchange. As I understand it, Professor Kinley's view is that the credit element of the currency rests upon the standard element in the sense that there is a point beyond which the former cannot be extended without exerting such a pressure upon bank reserves that the demand for the standard will increase and its value rise. While Professor Kinley is unable to tell us precisely where that point is, he feels certain that it is some place and that it is located by the expansion of credit. On this subject I cannot share his conviction. I do not believe that his explanation of the relation between credit and bank reserves is true to facts; neither do I believe that the safety of our credit system depends primarily upon the proportion that exists between bank reserves and the volume of credit instruments. In order to make clear my meaning, I may perhaps be permitted to state briefly the theory of credit which I hold.

Credit is the means by which we make possible exchanges in which a period of time elapses between the transfers of commodities. A transfers a good to B, who will make the counter-transfer only after the lapse of some time. A credit instrument of some sort bridges over this period by affording A legal security that the counter-transfer will in due time be made and by enabling him to obtain, if he wishes, means of payment in the interim. The process of exchange which was begun by A's transfer to B and the creation of the credit document is completed either by a counter-transfer of goods when the credit instrument matures, or earlier, if A chooses to use said instrument as a means of payment in its original or in a modified form. The important fact to note is that goods are ultimately paid for by other goods, the credit being simply a step in the process. Now the volume of such exchanges does not seem to me to bear any necessary relation to the volume of those effected through standard or any other form of commodity money, nor does their safety seem to me to depend primarily upon the amount of standard money in existence or in the bank reserves. It depends rather upon the successful running of the industrial machinery, upon the saleability of goods and the sound judgment and honesty of business men. Bankers need to keep reserves, not primarily because a large volume of exchanges is being conducted through credit, but because their customers regularly conduct some exchanges by means of commodity money and look to them to supply what they need. The amount of commodity money they find it is necessary to keep depends upon the amount so used regularly, but this amount has little to do with the volume of exchanges effected through credit. It does not even bear any fixed relation to the balances which have to be settled between banks, cities and countries. These can be and are more often settled by credit arrangements. Bankers also need reserves to fall back upon when credit is impaired, but at such times their efficiency is, at the best, very limited. The most useful means of meeting such exigencies is the more extended use of those forms of credit which are not impaired and which can serve as means of payment. If the credit has resulted from genuine commercial transactions, the successful completion of which depends simply upon the running of our industrial machinery in the usual fashion, it will be as safe as possible, whether bank reserves be large or small in proportion to its volume; under other circumstances it will be unsafe and dangerous, no matter how small its volume or how large the reserves. No amount of reserves can undo the evils of false credit or restore the losses of its victims. When business men indulge in such practices on a large scale, disaster will follow as surely as night the day. When they do business on the basis of sound credit, they can safely conduct almost any amount without exerting undue pressure upon bank reserves.

Holding this view of credit and of its relation to bank reserves, I cannot but feel that Professor Kinley's intricate and ingenious reasoning regarding the marginal utilities of the various elements of the medium of exchange and the striking of an equilibrium between them is mostly beside the mark. I consider the doctrine of marginal utility very useful in the explanation of the manner in which we value the goods directly applicable to the satisfaction of our wants, but I do not believe we can get much assistance from it in the explanation of the relation between so-called social needs and the instrumentalities which satisfy them. Society is not a person which feels needs and applies goods to their satisfaction after the manner of men of flesh and blood. The term social need is simply a convenient but inaccurate expression for the resultant effect of the real needs felt by actual persons, and the means of their satisfaction must be analyzed, and reduced to the goods actually used by actual persons before we can begin the study of their valuation. When this process has been applied to the medium of exchange, we shall find that we have to do either with consumer's goods which are bartered for other consumer's goods and then rebartered, or with a mere process which enables us to dispense with this three-cornered act of barter. When we exchange one consumer's good for the others, which Professor Kinley calls commodity money, we proceed upon the basis of their value as consumer's goods. There is nothing in the situation which requires or suggests any other basis of procedure. When we dispense with the commodity medium there is no intermediate good to value. We have now to do with credit instruments, the valuation of which depends upon entirely different principles.

The use of a consumer's good as an intermediary in exchanges withdraws some portion of it temporarily from its consumption uses and affects its marginal utility in those uses in presisely the same manner as storing it in any other form. The marginal utility of wheat and of all the products into which it enters is affected by storing it up in the ware-houses and temporarily keeping it away from the active market. In like manner, the marginal utility of gold is affected by its use in public and private reserves and as a circulating medium. The fact that gold possesses a very high degree of durability and that the quantity of it is very large is, as Professor Laughlin has shown, important in the explanation of the phenomena of its value, but it does not alter the principles upon which its valuation is based or the essential features of the valuation process.

Before closing I should like to say a word regarding the distinction between fixed and circulating credit which Mr. Andrew has drawn. I do not regard this distinction as important in the discussion of the theory of prices or of the part played by credit in exchanges. According to my understanding of the matter, fixed credit is frequently the basis of circulating credit and may be transformed into it almost at will. The two classes are not, therefore, mutually exclusive. They overlap to the extent that the owners of fixed credit wish to change it into the circulating form. It is, in my opinion, also a grave mistake to suppose that the fixed forms of credit do not assist in the mediation of exchanges, and that they *necessarily* occasion a demand for the circulating form or for commodity money at the date of their maturity or at any other time in their history. As before explained, they bridge over the gap of time intervening between the first transfer and the counter-transfer which completes the exchange. The goods sold are ultimately paid for by goods bought or sold by somebody else and not necessarily by commodity money or the circulating forms of credit. The deferring of a payment frequently renders the use of money in any form unnecessary. This is sufficiently apparent in the simple form of book accounts, but it is equally true in the case of the more refined and more complicated forms of credit.

The actual facts regarding the relation between the credit and commodity portions of currency and between the medium of exchange and prices seem to me to be so obscured by the habits of thought and predilections introduced by the old quantity theory that I almost despair of anyone who approaches the subject of prices from that point of view and devotes his energies to attempts to save some remnants from the ruin to which that theory seems to me to be doomed. However, I welcome discussions such as Professor Kinley has given us in this paper and in his recently published book, because I believe that the elaborateness, intricacy and difficulty of such efforts will hasten the day when more economists will seek a solution of the problems involved by a simpler, less devious and less laborious route.

IRVING FISHER: It seemed to me as I was listening to these papers I could give assent to almost all the positive propositions, but dissent to many of the negative ones. It is possible to approach the money question from so many points of view that it seems extremely dangerous to deny a proposition as true simply because you know some other proposition to be true.

I think the papers presented harmonize more than they appear to do on the surface, and some apparent contradictions could be avoided and some confusion prevented if we bear in mind that value of money, at the outset, has two distinct meanings. Its marginal utility is one meaning; its purchasing power another.

When the causes operating on the side of money are considered, these subjective and objective values will run somewhat parallel; but when we consider the causes which affect goods, the effects upon the two kinds of value may be quite different. The two values are very simply related because, as we know, the price of any commodity, or price in general, is simply the ratio of two marginal utilities, and the price level is therefore nothing more nor less than the ratio of the marginal utility of goods to the marginal utility of money. If we could only assume that the marginal utility of goods would remain constant we could carry with us both of these values and change alternately from one to the other without confusion.

There are, then, two steps. First, to determine the purchasing power of money; and, second, to determine its marginal utility.

The purchasing power of money is dependent upon what Professor Newcomb calls "the equation of societary circulation." This is a form of the quantity theory, or, at any rate, it includes the quantity theory of money. It is that the amount of money work done by money is equal to the amount of money work done on goods. That is, that the volume of circulating medium multiplied by its rapidity of circulation on the one hand is equal to the price level multiplied by the volume of business, (measured at a level of standard prices, and not at the level of current prices) on the other.

The price level thus depends upon three factors—quantity of circulating medium, its rapidity of circulation and the volume of business done. And if we can assume for a moment that the rapidity of circulation remains constant and the volume of business done remains constant, we should then arrive at the quantity theory, that the price level is directly proportionate to the circulating medium. In this sense, and this sense only, that theory seems to me valid.

But when we attempt to disprove this theory, as it would seem very easy to do by statistics, taking the price levels at different times and comparing them with the quantity of circulating medium, we find naturally no relation. To take an illustration, it is somewhat similar to the relation which holds true in an automobile between power and speed. The automobile maker will tell you when you buy an automobile that there is a direct relation between the power and speed. Yet if one were to sit in the automobile and watch the speed indicator and power lever and tabulate statistically the two, it would make two curves which would by no means run parallel. He might simply conclude, erroneously, that this relation did not exist, because other things have been omitted from the calculation. He might and would find many times that the opposite relation proves true, because the greatest power is put on when you are climbing hills and the speed is necessarily slow.

So, as Professor Laughlin has found in his Principles of Money a comparison between price level and quantity of money, regardless of the velocity of circulation and quantity of business transacted, necessarily shows very little relationship.

The real problem to be settled is not the quantity theory which, in the sense that I have described, seems to me, should be accepted at the outset, but to proceed further and discover the other quantities in this equation. Of itself it does not fix the price level, because one equation cannot determine four unknown quantities. We need the other relations between the velocity of circulation, the quantity of business and the volume of currency; and it is the study of these relations which we should take up. And here statistical methods, it seems to me, may be applicable and should be followed out. Pierre des Essars, of Paris, has tried statistically to show what the circulation of bank deposits is, and his statistics are somewhat astonishing, showing that it fluctuates in the same place and between places. For instance, in Paris the velocity of circulation of the deposits varies from a turn-over of something like one hundred a year to two hundred a year, while in the banks of Greece and Portugal the turn-over is only from three to ten a year. In this country statistics are a pressing need. So far as I know there are none, except those few which have been privately collected. In New Haven the rate varied from fifteen to twenty-five, in one bank, while in a small town in California the turn-over was less than once a year, although the deposit was non-interest bearing.

We see, then, that we know practically nothing of the velocity of the circulation the variations in which, alone, are enough to make non-applicable any comparison between the quantity of money and the price level, while the business transacted causes a further perturbation. A complete treatment of the subject taking account of all four variables has never yet been made.

THOMAS N. CARVER: It would probably be agreed by every one that under a system of free and gratuitous coinage of the standard metal, and under conditions where the standard metal was actually the basis of the circulation, the value of money of any kind would have to correspond to the value of the bullion of which the standard money was coined. In this country, for example, the value of a dollar must always be the value of 25.8 grains of standard gold, so long as gold remains the basis of our currency. Therefore, credit instruments of any kind could influence the value of money only in so far as they influenced the value of gold bullion, unless something should happen by which gold should cease to be the actual basis of circulation. Is it possible for the extension of credit to lower the value of gold bullion? It seems to me that if credit is in any sense a substitute for gold coin,—that is to say, if the business of the community can be carried on with less gold coin when there is a large extension of credit than would be necessary if there were no credit at all, it would logically follow that the use of credit must tend to cheapen gold. For if by reason of the use of credit less gold is needed in the currency than would otherwise be necessary, there is more gold available for use in the arts; and, the supply of gold in the arts being increased, this would tend, other things equal, to cheapen it, or to give less purchasing power to 25.8 grains of standard gold bullion. In so far as the use of credit cheapens gold bullion, it correspondingly cheapens money. Now credit may be looked upon as an extension of the supply of money, if you define credit instruments as money; or, if you insist upon a narrower definition of money which would exclude credit, then credit must be regarded as reducing the demand for money. From either point of view the result on the value of money is the same.

But another question very fully discussed in the preceding papers is whether or not the law of demand and supply can of itself give a value to money greater or less than the value of the material of which it is composed. And upon this question I should like to state the following series of propositions without explanation or qualification.

I.

The value of money differs from that of an ordinary commodity,—bread, for example,—in the following particulars:

1. Bread derives its value,—i. e. purchasing power—from the fact that it serves its distinctive purpose—that of satisfying hunger; whereas money derives its power to serve its distinctive purpose—that of facilitating exchange—from the fact that it possesses value or purchasing power.

2. When the physical quantity of bread is increased, other things equal, the want to which bread ministers is better satisfied than it was before, even though the total value of all the bread diminishes; whereas an increase in the physical quantity of money does not satisfy the need for money any better unless the total value or purchasing power of money is also increased.

3. The demand for bread is a demand for a quantity of nutriment which bears a close relation to the number

of pounds; whereas the demand for money is a demand for a quantity of value or purchasing power, and this does not bear the same relation to the number of pounds of money which the nutriment of bread does to the number of pounds of bread.

4. The supply of bread is the quantity of nutriment available, whereas the supply of money is the quantity of value or purchasing power available.

5. Since the demand for money is a demand for value, and the supply of money is a supply of value, it must follow that the law of demand and supply can not apply to the determination of the value of money *in the same way* that it does to the value of bread, for:—

6. It is one thing to say that the demand for nutriment and the supply of nutriment together determine the value or purchasing power of a given quantity of that nutriment; but it is quite another thing to say that the demand for value or purchasing power and the supply of value or purchasing power together determine the value or purchasing power of a given quantity of that value or purchasing power.

7. Assuming that nutriment is the quality which makes bread useful, and that warmth is the quality which makes clothing useful, it would be quite proper to say:—

The demand for $\left\{\begin{matrix}\text{nutriment}\\ \text{or}\\ \text{warmth}\end{matrix}\right\}$ and the supply of $\left\{\begin{matrix}\text{nutriment}\\ \text{or}\\ \text{warmth}\end{matrix}\right\}$ together determine the value of a given amount of $\left\{\begin{matrix}\text{nutriment}\\ \text{or}\\ \text{warmth}\end{matrix}\right\}$; but it would not do to say:—

The demand for $\left\{\begin{array}{c}\text{nutriment}\\ \text{or}\\ \text{value}\end{array}\right\}$ and the supply of $\left\{\begin{array}{c}\text{nutriment}\\ \text{or}\\ \text{value}\end{array}\right\}$ together determine the value of a given amount of $\left\{\begin{array}{c}\text{nutriment}\\ \text{or}\\ \text{value.}\end{array}\right\}$

II.

On the other hand, money obeys the law of demand and supply after a fashion, for:—

1. The supply of gold distributes itself automatically between the arts and the currency just as the supply of any other commodity distributes itself automatically among its various uses, that is to say, in accordance with the law of demand and supply.

a. When for any reason there is a disproportionate share of gold in the currency as compared with the arts, it shows a tendency to leave the currency and go into the arts, yet this could not happen if it did not at the same time show a tendency to become dearer in the arts than in the currency.

b. *Vice versa.*

2. The only reason why gold maintains the same value in the arts and the currency is that it can be transferred from one use to the other without cost.

a. If the mint should charge a seignorage of one per cent., no one would take gold to the mint for coinage unless the coin would be worth one per cent. more than the bullion. This would reduce the supply of coin. If it were impossible for scarcity to give a value to coin somewhat greater than its bullion value, this seignorage would cause the coin to disappear altogether. But if money is subject to the law of demand and supply, the seignorage would only reduce the supply of coin to that point which would give it a value one per cent. above its bullion value.

b. If it cost one per cent. of its value to reduce gold coin to bullion, no one would have any reason for doing so unless the coin were one per cent. cheaper. A disproportionate share of gold in currency, as compared with the arts, could not be automatically readjusted until the price of bullion had risen one per cent., or the value of coin had fallen one per cent. below its bullion value.

III.

1. There is no such thing as a law of demand and supply apart from the law of decreasing utility of successive increments of supply. Therefore the law of demand and supply can apply to money only so far as money can be brought under the law of decreasing utility, or of "final utility."

2. To say that the utility of a piece of money is the utility of the things which it will purchase is devoid of meaning. The question is: What determines the number of things which it will purchase?

a. If a loaf of bread will exchange for a peck of potatoes, it is because the final utility of a loaf of bread is equal to that of a peck of potatoes.

b. If a piece of money will exchange for a barrel of flour, it is likewise because the final utility of the money is equal to that of the flour.

c. To say that the piece of money will purchase something whose final utility is equal to that of the money, and then to define the final utility of the money *as consisting of* the final utility of that which it will purchase, is a crude case of reasoning in a circle.

3. The utility of money is the sum of the advantages which it affords to society, or the advantages of carrying on business with money rather than without money. The oft-explained disadvantages of barter give us, in negative form, a statement of the utility of money. Though goods are, as Professor Scott says, eventually paid for with other goods, yet it is found convenient to use money as a medium, and this convenience is a measure of the utility of money.

4. The final utility of money is the advantage which the final increment affords. Find out how greatly exchange is facilitated by means of this final increment, or how much easier it is to carry on the business of the community with this last increment than it would be with one less increment, and you have the measure of the final utility of money.

IV.

Some exchanges could scarcely be made at all without the use of money. Some could only be made with great difficulty, some with comparatively little difficulty, some could be made as easily without money as with it, and some could even be made more easily without it than with it. This gives us a law of decreasing utility of money. As much money as would enable the community to carry on those exchanges which could not be made at all without money, may be said to have a high degree of utility. As much more as would enable the community to carry on those exchanges which could only be made with considerable difficulty without money would have a considerable degree of utility. As much more as would enable the community to carry on those exchanges which could be made with very little difficulty without money would have a low degree of utility, while as much more as would enable the community to carry on those exchanges with money which could just as well be carried on without it, could be said to have no utility at all.

Let us take a concrete case. A merchant could scarcely do business at all without *some* cash in his drawer. This is a need of a real man of flesh and blood. But the exact amount which he must have is not fixed. He may keep more or he may keep less. If more of his working capital is in the form of cash, he must have less in the form of goods on his shelves. If less is in the form of cash, he may have more in the form of goods. When it comes down to a question of final increments the question is: Will it pay better to have one more dollar in his cash drawer and one less on his shelves, or will it pay better to have one less dollar in his cash drawer and one more on his shelves? If he decides that the inconvenience of doing business with a little less cash would overbalance the loss from having a few less goods on his shelves, he will provide for the extra cash. This gives a view of the final utility of money to that particular man. Since something like this is true of each and every individual doing business, it is true of the business community as a whole.

H. R. SEAGER: I want to speak of two points that were brought out earlier in the discussion. Professor Laughlin has provided us with a very interesting diagram indicating, as he views the subject, that the fall in prices from 1879 to 1903 was not due to a scarcity of gold, but rather—gold having increased at an unprecedented rate during that period—to a plethora of goods.

Now, I agree perfectly with Professor Laughlin's diagnosis of what has occurred. What has occurred is undoubtedly a more rapid multiplication of goods than of gold, and yet I cannot accept his description of the matter—the statement that there has been no scarcity of gold. It seems to me that what we mean by "scarcity" or "plenty" in this connection is comparative scarcity or plenty. If conditions had been perfectly normal, if there had not been any special resistance to the increase of gold in comparison with the increase of commodities, what would have happened during those twenty years would have been a relative increase in gold, to keep pace with the enormous increase in commodities and fairly stable prices. What actually did happen was an enormous increase in commodities, a somewhat smaller increase in gold and consequently a fall in prices, due, it seems to me still, to the scarcity of gold, in the sense in which it seems to me we should use the term in this connection.

Professor Scott said that the important thing in connection with the use of credit is that ultimately goods pay for goods. It seems to me that for our purpose that is not the important thing. That is an important proposition, but it is just as true of the use of money as of the use of credit—ultimately, in connection with all exchange, goods pay for goods. Our media of exchange are simply devices for facilitating what is ultimately, that is, at last analysis, barter. But the question that we are considering, as I understand it, is the causes that determine the value of money. With reference to that problem, it seems to me still, that the important thing about credit under present conditions is that credit as a medium of exchange, is a promise to pay money; and that the use of credit in nearly every case involves some demand for money, some demand for standard money. Professor Andrews has brought out very clearly the flexibility of the relation between credit and the demand for money, and Professor Kinley brought out the same point. I think we must all agree that there may be an increased use of credit without any increased demand for money, and yet it seems to me that the fundamental fact for our discussion is that credit is a promise to pay money, and normally involves a demand for standard money; that the expansion of credit normally means an increased demand for standard money to serve as a reserve, and in that way does operate upon the volume of money in the country.

J. LAURENCE LAUGHLIN: I wish to disclaim the explanation assigned to me by Professor Seager of the fall of prices from 1879 to 1900 as due to any plethora arising from over-production. My whole point was that there had been this enormous increase in the production of gold and we should have expected a fall in its value; but we found that the increased productivity of our labor and capital had yielded more units of product than before and permitted the sale of each unit of that product at a lower price. The greater productivity of an industry, so far as price is concerned, simply showed itself in a lower price per unit.

Also, I would not hold, as Mr. Andrew suggested, that the case of unconvertible paper was one to which the quantity theory as generally understood applies. In my humble opinion that is one of the cases in which it does not apply at all.

I next should like to say just one word in regard to Professor Kinley's argument. I think it is a great misfortune, by the way, that we cannot have two or three hours of discussion of these problems after we have had the papers. The point here is, how in actual fact the principles of demand and supply operate in working out exchange value between goods and money, and what the peculiar nature of demand for money is. It was Professor Carver who suggested the real question as that of working out the exchange value between the commodity and the bullion of which the standard money is made. We have a clear case here, it seems to me, and on that we ought to thresh the matter out.

If we were trying to get the exchange value between steel and wheat, if you had talked about the demand and supply of steel, and then continued your examination to the substitutes for steel, (as credit was a substitute for money), and if you had kept on discussing the price of steel and the nature of the demand for and supply of steel, you have not yet solved the whole problem of exchange value between steel and wheat. You must still discuss what influences were operating on wheat in order to get the exchange value between steel and wheat.

Now Professor Kinley's discussion of money and of credit went on the assumption that, if you could discuss the relative marginal utilities of the different media of exchange, you would be getting at the value of money. This is only one-half the problem. Moreover, so far as I could understand him, it was assumed throughout that when you withdrew a certain demand from a certain kind of money, or increased it, it affected the value of that money. That position carries with it an acceptance of the quantity theory, which I understand, in general, he rejects. According to his statement a limitation of its quantity changed its value. Now, even if we have settled the facts as to the supply of "money" we have not yet solved the problem of the exchange value between that money and other things. He has merely discussed the value of one product and its substitutes without touching what seems to me to be the pivotal thing existing in the relation between the standard, and the commodities with which we are concerned.

We are trying to solve the price problem or the question of the exchange ratio between something that we call " money " and these goods. The problem must be worked out in a more exact and clear discussion of the nature of the demand for money, and the actual price-making process by which the exchange ratio between these goods and that standard is reached.

HENRY B. GARDNER: The lines of argument by which I reach my own conclusions on this subject are somewhat different from any that have been presented to-day, and it is for that reason I should like to put it to test.

In the first place, the way in which the question is usually stated seems to me somewhat unfortunate. What determines the general level of prices? Much time has been spent in showing that the problem of general prices is simply the problem of a great number of special prices. If, instead of putting to ourselves the question of general prices, we consider the value of money, its exchange power in other commodities, we have simply the cause of the exchange value of a particular commodity. It does not alter the character of the problem, it alters the statement of the problem. The principal problem connected with the value of money is, Is there any peculiarly close relation between a change in the quantity and change in value—a peculiarly close relation, as compared with the corresponding relation existing in the case of other commodities. which justifies us in applying to the value of money what is known as the quantity theory?

In the first place, we must recognize, for reasons that have been very clearly brought out, that we cannot solve this problem statistically. We must fall back upon general economic principles. And in doing that I have always felt that it was necessary to assume these two cases: First, the case of an exchange medium made up of standard money; and served the modification of an exchange medium made up largely of instruments redeemable in standard money.

Take the first case. What determines the value of money where an exchange medium is made up of standard money? If the quantity increases the value would tend to fall; if the quantity diminishes the exchange value would tend to rise. And right here I want to refer to a statement Professor Laughlin just made, that in considering this question of the effect of change in quantity on change in value, we must take account of the changes which have coincidentally been going on in connection with other commodities. We must rather assume that other things remain constant. In the illustration which he used we certainly have no right to take any account of changes connected with the production of wheat if we are trying to discover the effects of certain changes in connection with steel on the general purchasing power of steel. We must assume that conditions in regard to wheat and every other commodity have remained constant while this change has been taking place in steel.

In the case of most commodities we know perfectly well that as the quantity increases, the value falls, but does not fall in proportion to the increase in quantity. The desire for the commodity is a limited desire. As its quantity increases its marginal utility falls rapidly, and in a short time we find that the total expenditure for that commodity has changed. It is only when the total expenditure for a commodity remains the same, without regard to the change in quantity of the commodity, that the value per unit will change in direct proportion to quantity.

The proposition is, then: Is there anything peculiar in connection with the demand for money—does the demand for money tend to increase or vary in direct proportion to changes in its value? Does the purchase power of the whole quantity of money remain constant without regard to changes in its quantity?

Now it seems to me, unless the change in the quantity of money has been of such a character as to destroy confidence, so that people who formerly exchanged goods for money are now unwilling to exchange goods for money, that in general the total purchasing power, the quantity of goods to be exchanged, remains the same without regard to the change in quantity of money—the total quantity of goods exchanging for the total quantity of money. Under these circumstances we have a commodity in which the value per unit must vary in direct proportion to the change in quantity.

WM. W. FOLWELL: In this discussion we have forgotten the payroll. That must be taken to account in any discussion of value. Adam Smith had an idea that there is a relation between labor and value, and after many years of study on this subject I am insensibly and unavoidably drifting to the position of Adam Smith.

F. R. CLOW: I wish to make just one suggestion. It would help us to make a distinction between the monetary unit and the standard of value. We have spoken all along as if the dollar, for instance, were identical with 23.22 grains of gold. It seems to me that that is not always true. For instance, on a Saturday at the appearance of an unfavorable bank statement, the prices lowered of the entire list of stocks. There you have an increase in the purchase power of the dollar. Now, did 23.22 grains of gold increase in value also in proportion to other commodities? Probably not. So we see the unit may vary without the variation in the value of the standard commodity.

Of course, that variation cannot last long. It cannot be very considerable. The connection is chiefly through the mechanical process of coining. But coining takes time, and therefore, the way is open for some variations of the unit from the standard.

DAVID KINLEY: Most of the points I had jotted down have been answered for me by preceding speakers, and there are but two points left to which I wish to call attention.

In the first place, Professor Scott's own language, while objecting to the theory that there is a relation between reserve and the volume of credit was a confession of the existence of such a relationship, because he talked about the "undue" expansion of credit,—undue with reference to the reserve,—and a relationship of some kind. Now all I claim is that there is a relationship of some kind. I did not assume to give a mathematical expression to it to-day.

The other point is simply this: I contend that the point of view which I assume for my purpose, that of society as a whole, is entirely competent and logical as a basis of argument. The reason why I assumed it was simply this. We regard society as a community determining what method of perfecting and making its exchanges is for the time being the cheapest, and that enables us to say that the marginal utility of money at that point is its purchasing power. There is a point where the marginal utility of money, subjectively considered, and its purchasing power, are identical, and that is the point I preferred to speak from.